

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented): Device for coupling a driving shaft and a driven shaft which are intended to rotate with respect to a casing in the continuation of one another substantially about an axis, the device comprising:

a dog clutch allowing the driving shaft to drive the driven shaft; and declutching means allowing the dog clutch to be uncoupled from a clutch-engaged position to a declutched position,

wherein the declutching means comprise at least one first channel secured to a driving element of the dog clutch, the first channel having the shape of a portion of a torus about the axis, at least one second channel secured to the driving shaft, the second channel having a helical shape about the axis, and a rolling element intended to roll between the first and in the second channel.

2. (previously presented): The coupling device as claimed in claim 1, wherein the rolling element is a spherical ball and in that a cross section of each channel is a portion of a circle of radius more or less equal to that of the spherical ball.

3. (previously presented): The coupling device as claimed in claim 1, wherein it comprises three first channels distributed uniformly about the axis, three second channels distributed in the same way as the three first channels, and three rolling elements.

4. (previously presented): The coupling device as claimed in claim 1, wherein the dog clutch comprises a first series of teeth secured to the driving shaft and a second series of teeth secured to the driven shaft, the teeth in each series have complementing

triangular shapes, the shapes are produced in such a way that when the driving shaft drives the driven shaft a continuation of each contacting surface of each series of teeth contains the axis.

5. (previously presented): The device as claimed in claim 1, wherein it comprises a brake intended to slow the driving element in its rotation with respect to the driving shaft.

6. (previously presented): The device as claimed in claim 5, wherein the brake is a reluctance brake.

7. (previously presented): The device as claimed in claim 6, wherein the brake comprises a plurality of slots made in a magnetic material belonging to the driving element, a plurality of permanent magnets secured to the casing and in interaction with the magnetic material.

8. (previously presented): The device as claimed in claim 1, wherein it comprises means allowing the driving element to rotate in just one direction of rotation about the axis.

9. (previously presented): The device as claimed in claim 7 comprises means allowing the driving element to rotate in just one direction of rotation about the axis, wherein the means that allow the driving element to rotate in just one direction of rotation about the axis comprise at least one roller free to rotate with respect to a cage secured to the casing, a surface of revolution belonging to the driving shaft and the axis of which is coincident with the axis of rotation of the driving element, a ramp belonging to the casing and inclined with respect to a tangent in the surface of revolution at a region on the surface of revolution where the roller is liable to roll, and an elastic element opposing the movement of the roller along the ramp .

10. (currently amended): The device as claimed in claim 9, wherein the surface of revolution is near the slots and ~~[[the]]~~ solid parts of the magnetic material so that there can be magnetic interaction between the rollers and the surface of revolution.

11. (previously presented): The coupling device as claimed in claim 2, wherein it comprises three first channels distributed uniformly about the axis, three second channels distributed in the same way as the three first channels, and three rolling elements.

12. (previously presented): The coupling device as claimed in claim 2, wherein the dog clutch comprises a first series of teeth secured to the driving shaft and a second series of teeth secured to the driven shaft, the teeth in each series have complementing triangular shapes, the shapes are produced in such a way that when the driving shaft drives the driven shaft a continuation of each contacting surface of each series of teeth contains the axis.

13. (previously presented): The coupling device as claimed in claim 3, wherein the dog clutch comprises a first series of teeth secured to the driving shaft and a second series of teeth secured to the driven shaft, the teeth in each series have complementing triangular shapes, the shapes are produced in such a way that when the driving shaft drives the driven shaft a continuation of each contacting surface of each series of teeth contains the axis.

14. (previously presented): The device as claimed in claim 2, wherein it comprises a brake intended to slow the driving element in its rotation with respect to the driving shaft.

15. (previously presented): The device as claimed in claim 3, wherein it comprises a brake intended to slow the driving element in its rotation with respect to the driving shaft.

16. (previously presented): The device as claimed in claim 4, wherein it comprises a brake intended to slow the driving element in its rotation with respect to the driving shaft.

17. (previously presented): The device as claimed in claim 2, wherein it comprises means allowing the driving element to rotate in just one direction of rotation about the axis.

18. (previously presented): The device as claimed in claim 3, wherein it comprises means allowing the driving element to rotate in just one direction of rotation about the axis.

19. (previously presented): The device as claimed in claim 4, wherein it comprises means allowing the driving element to rotate in just one direction of rotation about the axis.

20 (previously presented): The device as claimed in claim 5, wherein it comprises means allowing the driving element to rotate in just one direction of rotation about the axis.